THE ROTATIONAL SPECTRA, STRUCTURES, AND CHLORINE NUCLEAR ELECTRIC QUADRUPOLE COUPLING CONSTANTS FOR A FAMILY OF THREE HALOGENATED CYCLIC ALKENES, $C_nF_{2n-4}Cl_2$: n = 4, 5, AND 6

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Microwave spectra for a family of three halogenated cyclic alkenes, $C_nF_{2n-4}Cl_2$; n = 4, 5, and 6, have been observed and analyzed. Rotational constants, quartic centrifugal distortion constants, and nuclear electric quadrupole coupling constants for a total of 9 isotopologues have been reported. These molecules are near oblate tops containing two quadrupolar nuclei. Data was first obtained via a chirp pulse Fourier transform microwave (FTMW) spectrometer, and then further analyzed with a Balle-Flygare type FTMW spectrometer to determine the chlorine nuclear electric quadrupole coupling constants. The spectroscopic parameters for all 9 species will be presented and compared.